

DELAWARE FOREST SERVICE ANNUAL REPORT



July 1, 2021 to June 30, 2022

Conserve, Protect, Educate



DELAWARE DEPARTMENT OF
AGRICULTURE

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July 1, 2022

Michael T. Scuse, Secretary
Delaware Department of Agriculture
2320 South DuPont Highway
Dover, DE 19901

Dear Secretary Scuse:

The Delaware Forest Service had a very productive and challenging year in FY22. With the continuing difficulties posed by Covid-19 and an unanticipated outbreak of HPAI, the forestry staff met these challenges head on and still made strides in our primary program areas. Of particular note is our participation in the Governor's Tree for Every Delawarean Initiative (TEDI). We are working diligently to help the Governor reach his one million tree goal not in the proposed ten-year time frame, but within just a few years from now and before he leaves office. Through our Urban & Community Forestry and Forest Stewardship programs, we can offer unmatched tree planting support in both the urban and community setting and in rural areas of the state. We plan to plant nearly 500,000 trees in FY23.

The attached Annual Report for FY22 outlines many of our significant and noteworthy program accomplishments completed over the last fiscal year. Our guide is the comprehensive 2020 Delaware State Forest Action Plan that contains 22 specific strategies and 108 corresponding performance measures that all center around our mission to conserve, protect, and enhance Delaware's forests through education, management, and professional assistance.

Our success in all aspects of forestry would not be possible without your unwavering support and the generous support we receive from the Carney Administration, the General Assembly, and the U.S. Forest Service. Healthy, vibrant, productive forests benefit all Delawareans. We are dedicated to protecting this precious natural resource. Thank you for helping us achieve success in all our core forestry programs.

Sincerely,

Michael A. Valenti
Forestry Administrator

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Redden Forest

ADVISORY COUNCILS

COMMUNITY FORESTRY COUNCIL

Jay Ashby, Chair	Cypress Tree Care
Mike Krzyzanowski, Vice-Chair	Delmarva Power
Marcia Fox, Immediate Past Chair	DNREC
Kesha Braunskill	U&CF Program Director
Valann Budischak	DNLA
Taryn Davidson	Urban Forester
Kyle Hoyd	Asst. State Forester
Kerin Hume.....	Kent Conservation District
Carol Larson.....	Village of Arden
Blake Moore	Univ. of Delaware Extension
Megan Pleasanton	Delaware State Univ. Extension
Richard Pratt	Governor's Council on Forestry
Elain Schmerling	Ardentown
Mardi Thompson	City of Lewes *
Michael Valenti	State Forester
Herb White	City of Wilmington *

* Associate Member



GOVERNOR'S COUNCIL ON FORESTRY

Peter Martin, Chair	Georgetown
Richard Pratt, Vice-Chair	Clayton
Dot Abbott	Wyoming
William Jester	Harrington
Daniel Tartt, Jr.	Harrington
Rachel Egolf	Delmar
Michael Valenti	State Forester



EXECUTIVE SUMMARY

Delaware forests, both rural and urban, play a vital role in our society by enhancing the quality of life for all Delawareans. Trees provide us with many natural benefits, often referred to as ecosystem services. The Delaware Forest Service seeks to protect this valuable natural resource by:

- 1) Encouraging sound, sustainable forest management practices,
- 2) Monitoring for short- and long-term health threats, and
- 3) Improving public awareness of the importance of Delaware's trees and forests and the forestry programs offered by the Delaware Forest Service.

These diverse strategies are incorporated within three main program areas:

Conservation, Protection, and Education

FOREST CONSERVATION

Urban & Community Forestry

The Delaware Forest Service administers an Urban & Community Forestry program that provides technical assistance to cities, towns, communities, developers, and local governments. Staff members help develop community forest management plans and street tree inventories. Foresters also review proposed developments to protect and conserve community tree resources. Additionally, annual community-based forestry grants are awarded to organizations for tree planting and tree management projects on publicly owned lands. In FY22, the Delaware Forest Service awarded 37 community forestry grants totaling \$160,633 for various urban and community forestry projects throughout Delaware.

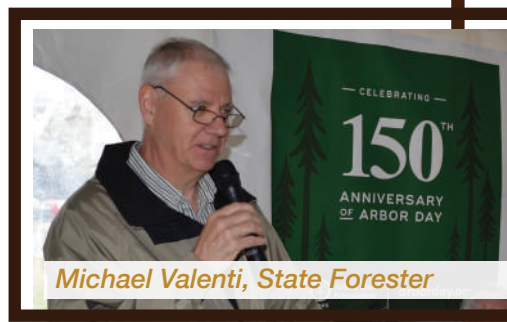
Landowner Assistance

Professional foresters assist landowners by helping them improve the quality of their forested lands. Such technical assistance includes a wide range of forest management activities such as reforestation, timber harvesting, timber stand improvement, and the development of a comprehensive forest management plan. In FY22, the Delaware Forest Service assisted private landowners reforest 145 acres, developed 13 forest stewardship plans for 2,754 acres, and assisted 9 landowners with various silvicultural practices on 3,696 acres.

FOREST PROTECTION

Wildland Fire

Forest Service personnel help protect Delaware's natural resources through the wildland fire program. Foresters and conservation techs assist volunteer fire companies with wildland fire suppression and offer a variety of wildland fire training courses. During FY22, in cooperation with the Delaware State Fire School, the Delaware Forest Service provided wildland fire training to 61 individuals; helped volunteer firefighters control 7 wildfires that burned 7 acres; and dispatched qualified personnel and resources (e.g., 20 person crews, single resources) at the national level to control and contain large wildland fires. Delaware wildland firefighters contributed more than 773 person-days to the national effort in FY22. Through a prescribed fire program designed to assist landowners manage their lands, staff completed controlled burns on a total of 574 acres. Delaware Forest Service staff members also provided fire prevention education (Smokey Bear) programs to 4,763 Delaware students.



Michael Valenti, State Forester

Forest Health

Forest pest surveys, annual inventories of forest health monitoring plots, identifying forest health problems for landowners, and educational programs are some of the ways the Delaware Forest Service seeks to maintain and improve the health of Delaware's forests. During the past year, foresters provided 61 forest insect and disease diagnoses for landowners and homeowners. Our forest health specialist reached out to several hundred students through educational programs and continued to monitor the entire state for destructive invasive pests such as thousand cankers disease, Asian longhorned beetle, Sirex wood wasp. Fortunately, none of these exotic pests have made their way into Delaware as of yet. However, since the first field detection of the emerald ash borer (EAB) in northern Delaware in 2018, this destructive insect has spread extensively throughout Delaware. Widespread death of ash trees can be attributed directly to the EAB.



Watershed Protection

Foresters from the Delaware Forest Service review all forest management operations and activities in the state to ensure compliance with the Forestry Practices Erosion and Sedimentation (E&S) law. In FY22, foresters issued 58 permits on a total of 3,316 acres of forest land and conducted 118 site inspections of forest management operations. During these inspections, foresters often provide technical assistance to forestry operators to help safeguard water quality, which is so vitally important to the citizens of Delaware.

FORESTRY EDUCATION

State Forest Management

The Delaware Forest Service manages 21,323 acres of land at Redden (13,969), Blackbird (6,031), and Taber (1,323) State Forests. Multiple use management objectives include wildlife habitat enhancement, recreation, forest products, natural resource education and water quality protection. In FY22, an estimated 41,466 visitors logged 35,171 user-days with such popular activities as hunting, wildlife observation, hiking and horseback riding.

Information and Education

Our technical programs would be incomplete without an active educational component. Thus, the Delaware Forest Service strives to inject education into every program area. The goal is to inform and educate all Delawareans about the importance of Delaware's forest resources and the need to properly manage these resources. In FY22, staff members provided forestry educational programs on a wide range of topics to 1,438 participants in Delaware's schools, clubs, civic organizations, and communities.

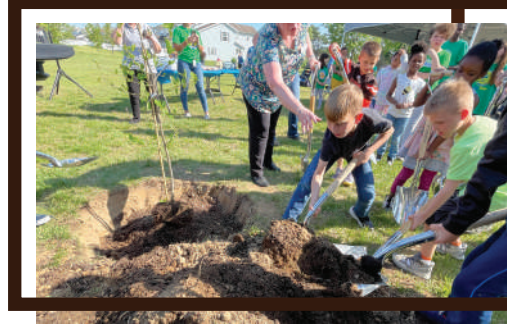
The Delaware Forest Service continues to work towards meeting and exceeding the 108 specific goals outlined in our 2020 State Forest Action Plan. Achieving these performance goals will help address the most important issues that threaten the health and well-being of one of Delaware's most important and widespread renewable natural resources.

It is my hope that you find this summary report to be informative, as it outlines the Delaware Forest Service's major accomplishments for FY22. We continue to fulfill our mission to conserve, protect, and enhance Delaware's forests through education, management, and professional assistance. Feel free to contact our offices or visit de.gov/forestry if you require any type of forestry or shade tree assistance or if you simply wish to learn more about the Delaware Forest Service.

Michael A. Valenti
Forestry Administrator

FOREST CONSERVATION

A major issue facing forests is poor management. Many of Delaware's rural forests are managed for timber production, but it can take 40 years to grow a mature crop of timber. Many landowners might only harvest timber once in their lifetime and not be aware of management techniques to help them fully achieve their forestry objectives. The Delaware Forest Service offers assistance to help these landowners. Many communities also suffer because they lack management plans for their street trees, a complete inventory of their trees, or the expertise to manage them. Therefore, many urban forests do not provide their full range of benefits such as energy savings, reduced storm water runoff, and temperature moderation.



Urban and Community Forestry

Urban and Community Forestry Program

The Urban and Community Forestry (U&CF) Program provides technical assistance to cities, towns, communities, developers, and local governments to advise communities on management plans and street tree inventories. Urban foresters also review proposed developments to conserve and protect urban forest resources. In addition, annual community forestry grants are offered to various groups for tree management and tree planting projects on public lands. The program also provides educational training through public presentations to schools, universities, municipal groups, and regional tree workshops.

Urban and Community Grant Program

The Delaware Forest Service U&CF Program offers grants to municipalities, schools, non-profit organizations and government agencies for tree planting and management projects on public lands. Program goals are to increase tree canopy, beautify community spaces, and promote the many benefits of trees. Grants are made possible by the U.S. Forest Service and state funds. Recipients must provide a 50-50 cost share match that can be met through volunteer labor, donated materials and services, or cash. The program is open to any city, town, community group, homeowner association, or certified non-profit organization in the State of Delaware. Awards range from \$500 to a maximum of \$5,000 in one of two project categories, tree planting or tree management, and all projects must take place on public lands. Priority is given to first-time applicants, Tree Friendly Communities, and municipalities with urban tree canopy resolutions.

In FY22, the Delaware Urban and Community Forestry Program awarded a total of \$160,633 for 37 tree projects throughout the First State.

URBAN AND COMMUNITY GRANTS

Community	County	Request
City of Newark	New Castle	\$5,000
Friends of Historic Riverview Cemetery	New Castle	\$4,600
Alapocas	New Castle	\$5,000
Village of Ardentown	New Castle	\$5,000
Bay Pointe	Sussex	\$1,537
Westover Hills A	New Castle	\$5,000
Shipley Heights	New Castle	\$3,500
Town of Smyrna	New Castle	\$5,000
Maple Valley Swim Club	New Castle	\$4,200
Total		\$38,837

Urban and Community Forestry (U&CF) Grants

In FY22, the Delaware U&CF Program awarded \$160,633 for 37 tree projects throughout the State as part of its annual grant program.* Over the past 16 years, the program has given more than \$1.98 million to help communities increase tree canopy and promote the natural benefits of trees: cleaner air and water, increased property values and civic pride, and reduced storm water runoff and flooding.

Grant requests are **not final until project completion. All requirements must be met, including cost-share match, and approval granted by the U&CF Program.*



Climate, Coastal and Energy Projects

The U&CF Program partnered with the Delaware Department of Natural Resources and Environmental Control (DNREC), Division of Climate, Coastal and Energy to provide funding for tree planting projects in 10 communities this year. The Climate, Coastal and Energy program has goals that focus on carbon sequestration and trees meet this objective by providing long-term carbon storage. Each tree planted through the grant program will have its carbon values calculated and help contribute to the goals in the state's climate action plan.

Delaware is part of the Regional Greenhouse Gas Initiative (RGGI), a multi-state carbon dioxide cap-and-trade program developed as a cooperative effort among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, and Virginia to cap and reduce carbon dioxide (CO₂) emissions from the power sector. Money raised through the RGGI is returned to participating states to invest in energy efficiency, renewable energy and other consumer benefit programs. In Delaware, the RGGI program is administered by DNREC.

CLIMATE, COASTAL AND ENERGY PROJECTS

Community	County	Request
Friends of White Clay Creek State Park	New Castle	\$5,000
City of Lewes	Sussex	\$2,692
Fork Landing Farms HOA	Sussex	\$2,946
Unitarian Universalist Church of Mill Creek	New Castle	\$1,000
Frenchtown Woods	New Castle	\$5,000
Westover Hills C	New Castle	\$1,550
Mill Pond HOA	Sussex	\$5,000
Rockwood Park	New Castle	\$2,900
City of Rehoboth	Sussex	\$5,000
Barley Mill Maintenance Corp	New Castle	\$5,000
Total		\$36,088



Nonpoint Source Grants

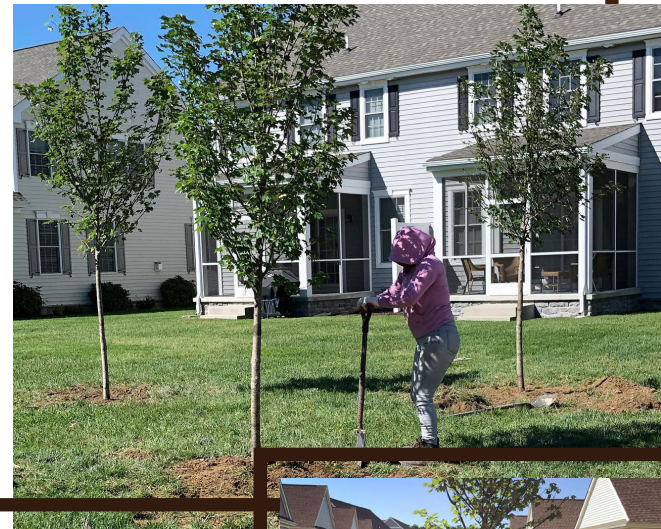
The U&CF Program partnered with the Nonpoint Source Program (NPS) of DNREC to plant trees in EPA priority watersheds in Delaware. The program aims to address the issue of NPS pollution as it affects Delaware's numerous waterbodies. Efforts include grant funding, education, outreach, and partnerships with other organizations. Reductions in NPS pollution can be achieved through the incorporation or installation of specific best management practices (BMPs) addressing agriculture, silviculture, construction, septic systems, and hydromodification activities. Tree plantings are a BMP that can help intercept stormwater and nutrient runoff, reduce sedimentation and erosion, and filter pollutants. In FY22, \$32,354 was provided to seven community groups to fund tree projects that address NPS pollution.

NONPOINT SOURCE GRANTS

Community	County	Request
Sharpley Civic Association	New Castle	\$4,920
Tidewater Landing Property Owners Association, INC.	Sussex	\$4,800
Village of Fox Meadows	New Castle	\$5,000
Town of Millville	Sussex	\$5,000
Westminster	Kent	\$5,000
Delaware Botanic Gardens	Sussex	\$5,000
City of Dover	Kent	\$2,634
Total		\$32,354

FOCUS FUNDING PROJECTS

Community	County	Request
Woods Manor	Kent	\$843
Global Ripple Effect	New Castle	\$1,811
Barley Mill	New Castle	\$1,870
DNREC	New Castle	\$210
Rehoboth Arbor Day	Sussex	\$1,800
HT Blackbird Fall planting	New Castle	\$20,884
Total		\$27,418



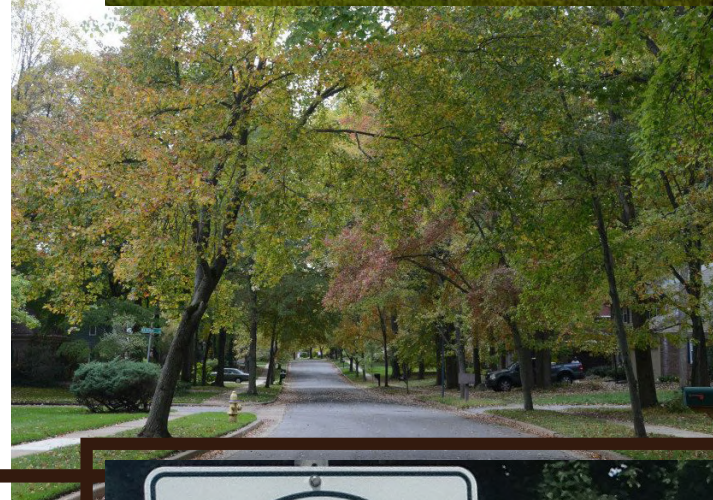
Focus Funding Projects

The U&CF Program provides annual funding for projects that meet program goals to reach milestones from Delaware's Forest Action Plan. Each of the projects funded this year provided trees that were planted in areas to help prevent storm damage, mitigate heat island effects, increase tree canopy and foster appreciation for our urban forests.

Tree Friendly Community Program

Delaware's "Tree Friendly Community Program" honors communities and HOAs that protect and enhance urban forests. Bronze, Silver, Gold, and Platinum levels correspond to their length of participation. A total of 20 communities earned the honor by achieving at least three of the following:

1. Annual ceremony to promote community forests,
2. Tree project to enhance urban forests,
3. Community forestry management plan,
4. Community ordinance to protect trees,
5. Tree commission or tree board, or
6. Tree budget of \$1 per household.



TREE FRIENDLY COMMUNITY PROGRAM

Community	County	Level
Alapocas	New Castle	Gold
Fairthorne	New Castle	Silver
Tavistock	New Castle	Platinum
The Village of Fox Meadows	New Castle	Bronze
Westover Hills A	New Castle	Platinum
Westover Hills C	New Castle	Platinum
Champions Club	Kent	Silver
Coastal Club of Lewes	Sussex	Bronze
Lewes Crossing	Sussex	Bronze
Nassau Grove	Sussex	Bronze
Savannahs Landing	Sussex	Bronze
Sawgrass Community	Sussex	Bronze
Village of Cinderberry	Sussex	Bronze

Tunnell Communities

- Bayside	Sussex	Gold
- Baywood	Sussex	Gold
- Creekside	Sussex	Gold
- Coveside	Sussex	Gold
- Dockside	Sussex	Gold
- Lakeside	Sussex	Gold
- Seaside	Sussex	Gold

**There are 20 neighborhoods
and homeowner groups certified as
Delaware "Tree Friendly Communities."**



TREE CITY USA®

Tree City USA Program

With help from the Delaware U&CF Program, 14 towns and cities in Delaware achieved Tree City USA status from the National Arbor Day Foundation. Tree City USA is a community improvement program honoring cities and towns that promote and enhance their forests by meeting four standards:

1. Establish a tree board to develop and administer a public tree management program,
2. Create a community tree ordinance that designates the tree board which has responsibility for writing and implementing an annual community forestry work plan,
3. Spend at least \$2 per resident per year on community forestry activities, and
4. Celebrate Arbor Day with a ceremony that includes a proclamation from the mayor and council.

TREE CITY USA®

Community	County	Years
New Castle	New Castle	10
Ardentown	New Castle	13
Arden	New Castle	15
Newark	New Castle	21
Wilmington	New Castle	29
Smyrna	Kent	17
Dover AFB	Kent	30
Dover	Kent	33
Henlopen Acres	Sussex	6
Georgetown	Sussex	8
Bethany Beach	Sussex	16
Milford	Sussex	18
Lewes	Sussex	21
Rehoboth Beach	Sussex	31



On April 30, 2022 the Delaware Forest Service's Urban and Community Forestry Program partnered with the City of Lewes's Library Roots and Shoots program to plant 25 trees in the George HP Smith Park for their Arbor Day Celebration. The planting was sparked by "Trees for Jane" a new campaign inspired by Dr. Jane Goodall to empower people around the world to restore and protect our forests. The event brought together approximately thirty volunteers and City of Lewes staff. The trees planted in George HP Smith Park will increase the tree canopy, beautify the park, provide shade for pedestrians and homes for wildlife, and help with stormwater management.

Dover Air Force Base Celebrates 30 Years as a Tree City USA.



During Arbor Day month, the U&CF program also partnered with the City of Newark to participate in a volunteer tree planting in Folk Memorial Park. 60 volunteers helped plant 200 native trees in part to help with afforestation of open space in the park.



Tree Line USA

Communities across America depend on safe, reliable electrical service to power homes and businesses, while protecting and enhancing the urban forest. The Tree Line USA® program recognizes best practices in public and private utility arboriculture to show how trees and utilities can co-exist for everyone's benefit. The Arbor Day Foundation and the National Association of State Foresters partner on the initiative, which honors utilities for meeting five core standards in quality tree care, annual worker training, tree planting and public education, tree-based energy conservation program, and annual Arbor Day celebrations.



Tree Campus USA

Delaware State University is the only Tree Campus USA® in the First State, an honor held for 10 consecutive years. The award recognizes institutions that have implemented a tree care plan supported by funding allocations, a campus advisory committee, educational outreach, and an annual Arbor Day celebration. DSU is one of the few Historically Black Colleges or Universities (HBCU) in the U.S. to earn this designation. Its main campus features an arboretum with trees representing over 130 species. DSU also has an herbarium, the only one on the Delmarva Peninsula.



Educational Programs

The U&CF program provides ongoing education to the public, including an Annual Arborist Seminar for tree care professionals. The last Joint DE-MD Arborist Seminar was held in November 2021, in Denton, MD.



The Delaware Forest Service's U&CF program partnered with Maryland Forest Services U&CF program to have a joint **Arborist and Tree Care Seminar** held at Caroline County 4-H Park in Denton, MD. The event was the only one of its kind on the Delmarva Peninsula. Over 100 participants from the tree care industry from throughout Delmarva had the opportunity to attend. The agenda included demonstrations and lectures and provided continuing education credits for certified arborists, pesticide applicators, and licensed Maryland tree experts.



The Delaware Forest Service's U&CF Program provided programming in 2022 to commemorate **Harriet Tubman's 200th birthday**. In the spring of 2022, four guided hikes were open to the public to walk through the Blackbird State Forest's Tybout Tract and learn about the history of the Underground Railroad and Harriet Tubman's contribution. The hikes were led by a partnership with historic interpreter Dionne Patterson from the UGR3day Underground Experience Inc. The guided hikes invited citizens of Delaware to visit and promote an appreciation of the forest while highlighting the historic and cultural importance of the Blackbird area in the Underground Railroad. Harriet Tubman noted a place called "Blackbird" as one of her landmarks as she journeyed through Delaware from the Harriet Tubman UGRR Byway booklet. Participants left with information about the U&CF Program and hikes included free container trees, provided by Delmarva Power, to all participants.

Delaware Tree Stewards Program

The U&CF Program launched Delaware Tree Stewards in Fall 2020 as a way to connect people to their landscapes through the planting and caring of trees and forests, which are essential in protecting the lands and waters of the First State. By training and empowering citizens locally, the goal is to ensure Delaware has a greener future. Whether they are young or old, trees benefit from knowledge and care. The Delaware Tree Stewards is designed to help citizens take an active role in caring for trees, supporting local ecosystems as well as the communities that depend on them. By completing training and networking with other stewards, graduates will recognize opportunities and coordinate tree projects where they are needed most.



TEDI FUNDED GRANTS

Community	County	Request
Reserves at Lewes Landing HOA	Sussex	\$3,187
Meadows of Beaver Creek	Sussex	\$8,681
Lakeshore Village	Kent	\$915
Sawgrass HOA	Sussex	\$5,000
Hunn Property	Kent	\$8,153
	Total	\$25,936



Governor Carney Launches Tree for Every Delawarean Initiative (TEDI)

In November 2021, Governor John Carney launched a new program that aims to plant a tree for every Delawarean as part of the state's efforts to reduce greenhouse gases in the atmosphere. "We all have a stake in improving our environmental health to ensure a stronger and healthier Delaware," said Lt. Governor Bethany Hall-Long. "By involving the community and encouraging Delawareans across the state to plant trees, we are taking steps to mitigate carbon emissions and their impact on our state, our children, and future generations."

DNREC and the Delaware Department of Agriculture partnered to develop a website where residents can access information on selecting, planting, and caring for their trees. In addition, residents, non-profit organizations, and municipalities can visit de.gov/tedi to enter information and photos of their tree plantings to help count the trees planted throughout the state.

"The Tree for Every Delawarean Initiative is an important investment in our state's forestland that will help improve our economy and public health."
-Secretary of Agriculture, Michael T. Scuse



In April 2022, Governor John Carney joined Delaware Department of Natural Resources and Environmental Control Secretary Shawn M. Garvin, Department of Agriculture Secretary Michael T. Scuse and volunteers to plant trees on farmland recently acquired by DNREC's Division of Parks and Recreation for Killens Pond State Park.



More information on the Tree for Every Delawarean Initiative (TEDI) can be viewed here:

de.gov/tedi

Private Land Management

The Delaware Forest Service (DFS) assists private landowners in all aspects of forest management, ranging from tree planting and timber stand improvement to long-term management plans. In FY22, the DFS supervised the planting of 62,745 seedlings on a total of 3 sites for 145 acres of private land. One site (5 acres) was hardwood afforestation, 2 sites (140 acres) were pine reforestation. Seedlings are acquired from the Maryland Forest Service nursery in Preston and planted under the direction of DFS staff by private contractors. COVID and wet weather negatively affected planting season.

Forest Stewardship Program

The Delaware Forest Stewardship Program introduces landowners to innovative land management techniques. Any resident who owns up to 1,000 acres of forested land, or land that can be converted to forestland, is eligible for assistance. Delaware's Forest Stewardship Program began in June 1992 in cooperation with the U.S. Forest Service State & Private Forestry Program. The Forest Stewardship Committee, which consists of landowners, foresters, and natural resource managers, helps guide and promote the program. The DFS assists landowners on stewardship planning, offers advice on tree species, tree planting, and timber stand improvement. This year, state service foresters prepared 9 stewardship plans for properties in New Castle, Kent, and Sussex Counties that included management goals and prescriptions for 3,696 acres of land. No pre-commercial thinning (PCT) was conducted in FY22 due to COVID. There is a backlog of PCT scheduled for FY23.

CREP Program

In FY22, the DFS continued its partnership with the USDA Natural Resources and Conservation Service's Conservation Reserve Enhancement Program (CREP) to further its forested buffer goals and monitor existing CREP sites for compliance. The DFS has increased CRP funding and activities to include assisting CREP staff developing management goals, performing inspections, and assisting landowners.



State-Funded Cost Share Program

In FY06, the General Assembly established a state-funded forestry cost share program totaling \$75,000, which the DFS generates from cropland leases and timber sale revenues. The program supports the forest industry on the Delmarva Peninsula and benefits Delaware's communities and private landowners. The funding is divided between cost-share assistance to landowners (reimbursing them 50 percent of actual costs) for forest management and grants to communities for tree planting and tree management projects on public land. No state cost-share was used in FY22, but it is expected to be utilized in FY23.

Landowner Assistance



FOREST PROTECTION

Another major challenge for Delaware's forests is their long-term health. Every year, hundreds of acres of forest are affected by wildfire, exotic species, or pests such as the spongy (gypsy) moth, dogwood anthracnose, or southern pine beetle. Improperly conducted timber harvests and other forest management activities can also adversely impact forests and important resources such as water quality.

Wildland Fire Program

The Delaware Forest Service (DFS) maintains a cooperative agreement with the U.S. Forest Service to assist local volunteer fire companies with wildfire suppression and prevention on Delaware's one million acres of undeveloped land, which includes 359,000 forested acres.

The DFS provides annual training to federal, state, local government employees, and casual hires (public volunteers who serve on our wildland crew). This year, the DFS could not host many training sessions due to the COVID-19 restrictions that remained in effect. DFS provided training for 22 state, 2 federal, and 37 casual-hire firefighters. The DFS maintains two fire equipment supply caches, one at Blackbird State Forest and one at Redden State Forest, with equipment to help with fire suppression needs: three fire plows to establish firebreaks, two Type 6 wildland fire engines, four UTVs equipped with 75-gallon tanks and ignition equipment, and wildland fire suppression tools such as fire rakes, hose, and collapsible backpack water tanks that can be utilized when needed. Equipment is available 24 hours a day by request.

The DFS responded to seven wildfires and was on standby for over 395 outdoor fires throughout New Castle, Kent, and Sussex Counties. The past several years have been considered below normal for wildfire behavior due to moisture, temperatures, and fuels. However, Delaware's topography and fuel layers help to keep wildfires to a minimum.

Volunteer Fire Assistance (VFA)

In FY22, the DFS assisted 60 percent of Delaware's volunteer fire companies (36/60) with wildfire suppression, loaning of equipment, and/or training. Delaware's volunteer fire companies are vital to wildland fire response and suppression because they contribute the majority of manpower and resources for suppression efforts in the state.

Wildland Fire Program



**The Delaware Forest Service
responded to seven wildfires and was
on standby for over 395 outdoor fires
throughout the State.**



Volunteer Fire Assistance Grants

The DFS's VFA grant program is open to all Delaware volunteer fire departments and provides up to \$4,500 in matching grants to acquire pumps, hoses, and equipment to respond to and suppress wildfires. Since the program's inception, the DFS has awarded more than \$420,000 to enhance wildfire response and readiness in the First State. In addition to providing financial support, the DFS provides an equipment turn-in cache for VFC's to utilize where they can turn in old wildland fire hand tools, hose, and PPE and receive new items to use on suppression incidents. This program has been highly successful and is utilized by the majority of Delaware's VFCs.*

**No VFA grants were awarded during FY22. They had been awarded a month later, in July 2022. Information will be provided in FY23.*

Prescribed Fire Program

The DFS continued its successful prescribed burning program in FY22, completing burns on a total of 574 acres on state, federal, or private lands. Prescribed burning, also known as Rx burning, is an important part of land management that helps control unwanted vegetation, releases native plants, and reduces fuel loading in coastal areas. Rx burns are "prescribed" when site conditions meet pre-identified parameters to maximize safety and reduce smoke impacts. Factors include temperature, fuel moisture, wind speed, direction, relative humidity, and proximity to structures and populations. Many program partners rely on the DFS to help or run these Rx burns because our staff is NWCG (National Wildfire Coordinating Group) certified in suppression and prescribed fire. In addition to being NWCG certified, our staff also teaches these classes to our in-state partners and those looking to pursue a career in wildland fire.

The main highlight of this year's prescribed fire season was the Route 301 burn outside of Middletown. DFS handled the operations and logistics of this complex burn working with the town's VFC, police department, and town council along with DelDOT which is the landowner. The Route 301 burn was a 43-acre site, known as Dove Nest, and it is the very first pollinator mitigation site that DelDOT established as early successional habitat for native birds and bees. The purpose of the burn was to restore habitat and ensure that the site remains viable for pollinator needs. The area was last burned in 2019.

The Route 301 burn outside of Middletown was a 43-acre site. The purpose of the burn was to restore habitat for native birds and bees and to ensure the site remains viable for pollinator needs.

Wildfire Training

The DFS hosted its basic suite of classes for 9 rookie wildland firefighters online due to COVID-19 restrictions that remained in effect earlier this year. This number is about one-eighth of what the DFS would typically train in a given year. However, all 9 rookies completed the classes virtually and were eligible to attend fire camp.

The annual wildland “Fire Camp” event was moved to late May and early June, which allowed it to be held in-person because COVID-19 restrictions were eased. Fire Camp was required for all rookie and veteran fire fighters looking to be eligible (red card status) for the 2022 fire season. A total of 61 rookie and veteran fire fighters completed the one-day training that was offered twice to help reduce overcrowding. In addition to these classes, 7 firefighters also completed advanced-level wildland fire classes to enhance their qualifications and provide more assistance to communities and states in need.

The DFS supported the Mid-Atlantic Fire Academy by supplying logistical personnel to assist with operations. The academy was held at Garrett College in Maryland and over 200 firefighters signed up for training. In addition to the help DFS supplied, 5 state firefighters completed both in-person and virtual training sessions during the academy.



2022 Mid-Atlantic Fire Academy



The DFS supported the Mid-Atlantic Fire Academy by supplying logistical personnel to assist with operations.



Wildfire Crew Assignment

The DFS dispatched a Type 2 IA crew to fight a wildfire in Montana. The 20-person team mobilized at Blackbird State Forest in Smyrna and was assigned to the Harris Mountain Fire, a blaze that burned over 31,063 acres. The crew worked along with the West Yellowstone Smokejumpers for 14 days performing burnout operations, line holding, and mop up to secure division containment lines.





Colorado



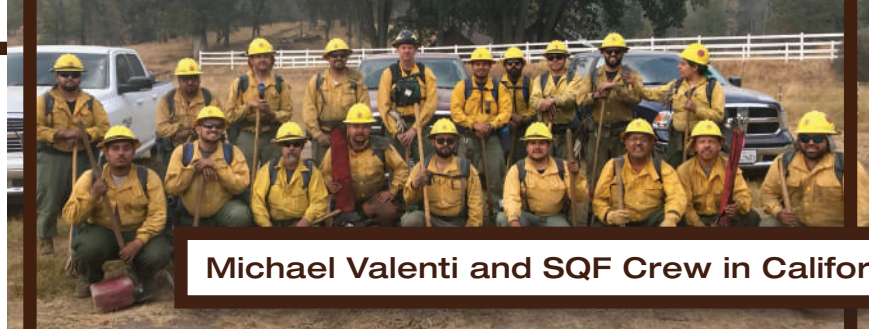
California



Washington



Washington



Michael Valenti and SQF Crew in California

Engine Crews and Single Resources

In recent years, the DFS began its official Type 6 engine program (out-of-state brush truck) to support suppression needs on a different platform. This program had great success this past year dispatching several crews throughout the country:

- Sam Topper (ENGB), Adam Keever (ENGBt), and Bradley Melson (FFT2) served on Delaware's Type 6 engine mobilized to the Oil Springs Fire in Colorado in June and July of 2021. They were then dispatched to southern California's Angeles National Forest to conduct initial attack operations with four other Type 6 engines for 14 line-days.
- Erich Burkentine (ENGB), Nikki Testa (ENGBt), and Hunter Melson (FFT2) served on Delaware's Type 6 engine in California on the Angeles National Forest, the Cleveland National Forest, the Dexter Fire, and the Cedar Creek fire in Washington State for 21 line-days.
- Todd Gsell (ENGB), Andy Ney (ENGBt), and Ryan Capron (FFT2) served on Delaware's Type 6 engine mobilized to the Cedar Creek fire Washington State for 21 line-days.
- Erich Burkentine (ENGB), Bradley Melson (FAL2), and Eddie Boyer (FAL2) served on Delaware's Type 6 engine on the Schneider Springs fire in Washington State for 21 line-days.
- John Petersen served as an INTS at Rocky Mountain Coordination Center in Denver from and completed the RMACC 2021 annual report in spring, 2022.
- James Dowd served as a GSUL on the EACC Type 2 IMT on Schneider Springs Fire in Washington State 14 line-days and also on the KNP Complex in California for 14 line-days.
- Michael Valenti served as crew boss (CRWB) on two assignments with Type 2 crews from Sequoia National Forest on a SQF Support for 19 line-days and on the Windy Fire in California for 14 line-days.

Sequoia National Forest - California



Rocky Mountain Coordination Center - Colorado

Forest Health Program

The **U.S. Forest Service's** regional forest health team joined the Delaware Forest Service (DFS) at Blackbird State Forest to examine white oaks showing signs of decline. White oaks can live for hundreds of years, and these trees will be studied over time to see if their condition improves.



Technical Assistance

In FY22, the DFS conducted 61 insect and disease diagnosis visits to landowners and homeowners. Our forest health specialist provided five forest health educational programs to 132 students.

Southern Pine Beetle (SPB)

Southern pine beetle, *Dendroctonus frontalis*, is a native pest that can occasionally build up to destructive population levels in Delaware's pine forests. In the spring of 2022, Delaware continued to participate in the Southwide Southern Pine Beetle Pheromone study with four traps at permanent locations in Sussex County loblolly pine stands. Of the four traps, only Redden State Forest's trap yielded 13 adult SPB over the six-week period from April 11 to May 23, indicating a low or declining SPB population at each location.



The Delaware Forest Service (DFS) works with landowners, state and federal agencies, and educational institutions to conduct forest pest surveys, provide technical assistance, and forest health education. Foresters emphasize a range of prevention strategies to minimize the destructive effects of serious forest pests. The DFS also uses aerial and ground surveys along with permanent forested plots to monitor the health of our forests annually.

Asian Longhorned Beetle (ALB)

Asian longhorned beetle, *Anoplophora glabripennis*, is an invasive pest that has killed street trees in New York, New Jersey, Massachusetts, Ohio, and Illinois. A new infestation was discovered in the port city of Charleston, South Carolina in May of 2020. This potentially harmful insect is native to Japan, Korea, and southern China. Unlike other longhorned beetles that attack stressed, diseased, and dying trees, ALB attacks and kills healthy trees. Consequently, there is concern that this exotic insect will become a major pest in North America. Asian longhorned beetles attack maple (*Acer*) trees, including Norway, red, sugar, and silver maple, and boxelder, as well as horse-chestnut (*Aesculus*), willow (*Salix*), and 10 other genera.



The DFS continued to monitor for ALB in 2022 with nine large panel traps placed throughout the state, focusing on industrial areas in the northern half of the state. The DFS has also installed "sentinel" maple plantings in six New Castle County parks to help foresters and the public get an early alert of ALB if they move into the area. To date, no ALBs have been found.

In FY22, the DFS conducted 61 insect and disease diagnosis visits for landowners and homeowners.



Bacterial Leaf Scorch (BLS)

Bacterial leaf scorch is caused by the bacteria *Xylella fastidiosa* that can only grow in the xylem of several species of plants (including, notably, most oaks in the red oak group) or in the gut of certain insect vectors such as leaf and treehoppers. During the late summer, infected trees show a distinctive marginal leaf scorch. Reduced water flow in the xylem of affected trees causes them to suffer from stress and eventual crown dieback, making them more susceptible to secondary insects and diseases.

There is no known cure or effective treatment (other than reducing water stress with irrigation and mulching) to this disease and infected trees in landscape settings usually die within about 10 years. DFS tree sampling in the early 2000s showed the disease occurring throughout the state. Permanent plots set up at each of the three state forests (Blackbird, Taber, and Redden) showed the disease is also prevalent in natural oak forests (with a red oak component) in all three counties.

Each year, the marked trees at the plots are revisited and effects of BLS on the leaves, canopy dieback, and survival rate are noted. It is theorized that BLS may be one contributing factor to the red oak decline noted by many forest health experts, at least from the mid-Atlantic area southward where BLS occurs. The most recent surveys for BLS occurred in September 2021. Adequate to heavier than normal precipitation appears to have kept BLS symptoms and branch dieback at bay for the last two or three years.

Emerald Ash Borer (EAB)

2021 was the first year in which this quickly spreading invasive pest of ash (*Fraxinus spp.*) has shown up across most of the state. The infestation appeared widespread across New Castle County with the 2021 aerial survey. The infestation appeared most heavy in the western portions of Kent and Sussex Counties in 2021. In 2022, the aerial survey detected widespread damage to ash in most of Sussex County in wetland areas. The DFS advises owners of high-value landscape ash trees to commence an insecticidal treatment plan with a certified arborist due to this threat.

Spongy Moth (formerly Gypsy Moth)

The aerial survey of Sussex County of June, 2022 showed several hundred acres of moderate to heavy defoliation of mixed hardwood stands around the Cypress Swamp area of southern Sussex County, and a few 5 to 10 acre oak forest defoliations around the Nanticoke State Wildlife Area in southwestern Sussex County. Three homeowners and one government official (DelDOT) contacted the forest health specialist to help locate outbreak areas this spring.



During the late summer, trees infected by BLS show a distinctive marginal leaf scorch.



Beech Bark Disease (BBD) and Beech Leaf Disease (BLD)

American beech (*Fagus grandifolia*) is a common tree easily recognized by its smooth gray bark. A stately forest tree, beech provides food for deer, squirrels, and, in much of its range, black bears. Unfortunately, a non-native disease complex called beech bark disease has killed millions of beech trees in the northeast. Currently found from Canada to the Appalachians as far as West Virginia, BBD begins with infestation by a scale insect, followed by infection of a destructive fungus. Most of the beech trees in infested stands die within a few years.

Beech leaf disease (BLD) is another health issue that affects beech. Discovered in Lake County, Ohio in 2012, BLD involves striping or banding of a thicker and darker than normal tissue between veins on beech leaves. Mature beech trees can die in about 6 to 10 years and smaller trees even quicker. The disease is associated with a foliar feeding nematode, *Litylenchus crenatae*. Because BLD is moving quickly through beech stands in Ohio, Pennsylvania, Connecticut, New York, New Jersey, and Ontario, the forest health program has begun surveying for BLD in addition to BBD using a standard one-tenth acre plot system established by the USFS Forest Health Protection program for the Northeast. Seven of these plots were established in 2021. Permanent plots are now at Trap Pond State Park, Tidbury Park in Dover, Blackbird State Forest, and the Judge Morris Estate portion of White Clay Creek State Park. The visual surveys and lab tests of leaf samples from these plots have yet to detect BLD. These newer plots supersede the four BBD plots established back in 2011.



Sirex Wood Wasp

An exotic wood wasp, *Sirex noctilio*, was first found in Oswego County, New York in 2004. It has since been detected in northern Pennsylvania, northern Ohio, Connecticut, Michigan, Vermont, as well as southern Ontario and Quebec. The wasp attacks pine trees and represents a serious potential threat to Delaware's loblolly pine resource. Adults can disperse 20 miles or more. Delaware began a survey program in 2006 using Lindgren funnel traps baited with chemical lures. From August to November of 2021, *Sirex* wood wasp monitoring continued with nine trap sites throughout Delaware. To date, *Sirex noctilio* has not been detected in Delaware.



Delaware began a survey program in 2006 using Lindgren funnel traps baited with chemical lures.

Watershed Protection

Forestry Practice Erosion and Sedimentation (E&S) Law

Delaware Forest Service (DFS) foresters review E&S permits for all silvicultural operations over one acre and provide educational materials and programs to landowners and loggers. By using Best Management Practices, such as forested buffers along waterways, water quality is protected by minimizing erosion and sedimentation. The program stresses the importance of properly conducted activities on forestlands that contain or are near open water through presale inspections and educating loggers on the need to protect water quality.

In FY22, the DFS issued 58 permits on 3,316 acres and conducted 118 site inspections. The biggest percentage of these activities was in Sussex County (32 of 58 projects), followed by Kent County (20), and New Castle County (6). One of the Forest Service's performance measures is to increase the percentage of timber harvests on nonindustrial private forestlands (NIPF) that follow a forest management plan. While all harvests must have an approved E&S permit, Delaware does not require a forest management plan for them. In FY22, 53 percent (1,117 of 2,075 acres) of NIPF harvests remaining forested had plans.

One of the Forest Service's performance measures is to increase the percentage of timber harvests on nonindustrial private forestlands (NIPF) that follow a forest management plan.



Seed Tree Law

The DFS also administers the Delaware Seed Tree Law that applies to all forested tracts of 10 acres or more with a combination of at least 25 percent loblolly pine, shortleaf pine, pond pine, or yellow-poplar. Landowners with woodlands that meet these guidelines must provide for reforestation of these lands unless there are at least 400 healthy, well-distributed seedlings present on each acre following the harvest. In FY22, 16 harvests totaling 1,377 acres were approved under the Seed Tree Law. The DFS will continue to monitor these properties to ensure proper reforestation.



In FY22, 16 harvests totaling 1,377 acres were approved under the Seed Tree Law.



FORESTRY EDUCATION

The lack of public knowledge about the importance of our forests, and the professional services available to assist landowners and communities with forest management, is our third major challenge. Many landowners and community leaders are unaware of the various Delaware Forest Service programs that can help them manage their forest resources. Many are also not aware of the educational and recreational opportunities at our State Forests.

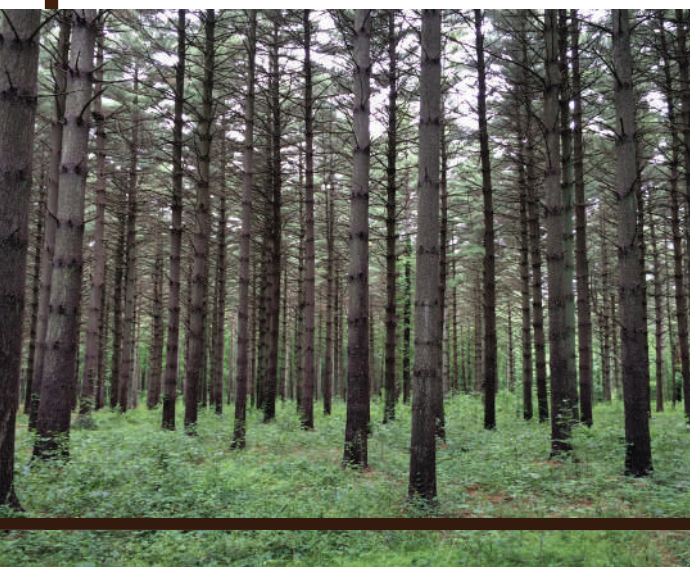
Delaware State Forests

Blackbird State Forest

Blackbird State Forest, located northwest of Smyrna, covers 6,031 acres. The ten tracts of Blackbird State Forest are open to the public for nature walks, hiking, jogging, and horseback riding all year. It features a 1/2-mile, wheelchair-accessible wildlife and nature interpretation trail on the Tybout Tract and the Blackbird Education Center on the Meadows Tract. Long-range management plans for Blackbird State Forest include timber production, wildlife habitat, recreation, soil and water protection, wetland and endangered species protection, and public education.

Blackbird State Forest Highlights

- Established new connector trail on Oak Hill Tract.
- Detected first infestation of spotted lantern fly.
- Wide ranging emerald ash borer damage.
- Removed acres of autumn olive in field hedgerows and edges.



Blackbird Bee Sanctuary



Autumn Olive

Long-range management plans for Blackbird State Forest include timber production, wildlife habitat, recreation, soil and water protection, wetland and endangered species protection, and public education.

Taber State Forest

Taber State Forest is located west of Harrington on Burrsville Road and remains in its natural, primitive state. The 1,323-acre forest is open to the public for hiking, observing wildlife, and seasonal hunting.

Taber State Forest Highlights

- In FY22, staff continued to add acreage into planted food plots for wildlife.
- Sold 63 acres of pulpwood in preparation for quail habitat.
- Continued cleaning up early successional habitat around field edges.
- Installed new fencing around multiple graveyards on site.



Redden State Forest

Redden State Forest, located north of Georgetown, totals approximately 13,969 acres. These forestlands are managed on a multiple-use basis, including timber production, wildlife habitat improvement, soils and water quality enhancement and protection, and recreational use.

Redden State Forest and the historic Redden Lodge continue to be popular sites for special events and meetings, as well as conferences. Groups holding annual meetings, events, and training were:

- 4-H Horse Advisory Council
- 4-H University of Delaware
- 1900 Club H.A.M. radio operator emergency communication exercise.
- American Discovery Trail members
- Antique Auto Club
- Boy Scouts of America
- Delaware Army National Guard
- Delaware Department of Corrections
- Delaware Easy Striders
- Delaware Equine Council
- Delaware State Police
- Delaware Tech Upward Bound
- Delaware Tech Summer Camp
- Delmarva Driving Club Mustang & Borrow



- Delmarva Search and Rescue K-9 training
- DHSS Georgetown, Milford, and Woodside
- DNREC Fish and Wildlife's "Take a Kid Fishing Day"
- FFA retreat and training
- Gee You Will Project
- Local Delmarva police departments
- USAF Delaware Air National Guard
- Various bird watching groups and tours
- Various church group retreats
- Various equine group benefit rides
- Various forestry walking tours
- Various state agency meetings

Redden State Forest Highlights

- Sold a 680-acre pulpwood sale on the Tunnel Tract in June of 2022.
- Completed a 628-acre pulpwood sale that was sold in 2018 involving stands on the Chesapeake, Collins Pond, Deep Creek, Ellendale, and HQ Tracts.
- Completed 56 acres of prescribed fire on Headquarters, Jester, and J.G. Townsend Tracts.

Information and Education

The Information and Education Office coordinates all of the Delaware Forest Service's information and education activities. Staffed by a full-time community relations officer and trainer-educator, it informs the public of the agency's services and provides quality environmental education programs.



Blackbird



Redden



Education Centers

The Delaware Forest Service (DFS) operates and manages education centers at Redden State Forest and Blackbird State Forest. Both feature interactive displays on Delaware's forests and their proper management, with comfortable work areas for students and teachers to participate in educational activities. Each has a classroom for indoor meetings and outdoor trails for a dynamic learning experience.

Arbor Day Overview

The DFS sponsors annual Arbor Day activities including a poster contest and free seedling program and also presents Arbor Day and tree education programs in schools statewide in April.

Annual Free Seedling Program

Students in kindergarten to grade five received over 9,695 seedlings through the Annual Free Seedling Program. Classes must participate in the Arbor Day Poster Contest to be eligible for free seedlings and tree programs. DFS staff delivered seedlings to public and private schools statewide.

Several volunteer groups provided the invaluable service by separating, wrapping, and bagging each seedling, which are then delivered to classes to ensure survival. Staff also performed 10 Arbor Day ceremonies at elementary schools across the state, reaching 550 children.



In FY22, students received over 9,695 seedlings through the Annual Free Seedling Program.

Arbor Day Celebration and Poster Contest

Arbor Day Celebration

Governor John C. Carney, Jr. proclaimed “Arbor Day in Delaware” on May 6 in a ceremony at Rehoboth Elementary School attended by fifth-grade students and staff, members of the General Assembly, and city and state officials. The event recognized Mayor Stan Mills and the City of Rehoboth Beach for its 31st year as a Tree City USA. Governor Carney also honored student winners in the Delaware Forest Service’s annual Arbor Day School Poster Contest.

Ten new native trees were planted on the school campus for the event. Also attending were: Speaker of the House Peter Schwartzkopf, Senator Ernesto Lopez, State Auditor Kathleen McGuinness, Education Secretary Mark Holodick, DDA Secretary Michael T. Scuse, DNREC Secretary Shawn Garvin, and State Forester Michael Valenti.



Arbor Day Poster Contest

The Delaware Forest Service invites students in grades K-5 to participate in the Arbor Day Poster Contest. This year’s poster theme was “Trees are Terrific...For Today and Tomorrow!” Participating elementary schools organized preliminary contests and forwarded first, second, and third place entries to the Delaware Forest Service for final judging. Poster contest winners were selected for each county in the following categories: kindergarten, first and second grade, third and fourth grade, and fifth grade.

Winners received an ornamental tree planting at their school and a \$25 dollar gift card. Lilly Bartlett of Allen Frear Elementary in Camden was the overall winner of the Arbor Day Poster Contest and received an additional \$25 gift card. More than 160 classes from 68 private, public, and home schools, and youth groups participated in the FY22 contest.

Fire Prevention

October is National Fire Prevention Month and the Delaware Forest Service provides fire prevention information packets (Smokey Bear Goody Bags) to first grade classrooms. In FY22, 4,763 students from 62 schools received Smokey Bear school supply bags featuring Smokey Bear and his timeless message. The Delaware Forest Service also offers fire prevention materials to children and families at community events, holiday parades, and fire company open houses.



Smokey Bear joined Dover Mayor Robin Christiansen, the Dover Volunteer Fire Department, and the Delaware Forest Service to celebrate “National Fire Prevention Week” at the Dover Public Library’s Songs and Stories event for young children and their families.



Environmental Science Competitions

The Delaware Forest Service (DFS) administers the forestry component of the Delaware Envirothon, a statewide competition for both public and private high school students. The DFS trains team coaches and student participants. They also develop forestry test materials. A total of 15 teams competed in the 2022 Envirothon.

The DFS also participated in the Delaware Science Olympiad for middle and high school students, which promotes student interest in science and K-12 science education.

The DFS hosted the FFA Forestry CDE (Career Development Event) on June 21, 2022. Five high school teams and four middle school teams competed on species and disease identification, map reading, compass and pacing course, and measuring board foot volume. Middletown FFA placed first and represented Delaware at the National Forestry CDE in Indianapolis in October 2022 at the 95nd National FFA Convention & Expo.



PROJECT LEARNING TREE

Project Learning Tree

The Delaware Forest Service's trainer-educator works with partner organizations such as the Delaware Association for Environmental Education (DAEE) to promote a wide range of environmental literacy education opportunities for all ages throughout the First State. 78 teachers were trained on Project Learning Tree in FY22.

Adult Programs

Forest Service staff perform workshops on such topics as grant writing, urban tree care, and GIS/GPS for attendees including state agencies, nature center managers, and community leaders. In FY22, the DFS trainer-educator presented six lectures on forestry topics to 100 people.

Community Events and Educational Programs

Throughout the year, the DFS offers special educational programs for students and training programs and presentations for community groups. In FY22, the DFS trainer-educator presented programs at 17 community events and to 1,260 students in grades pre-K to high school.



Jim Dobson (at right), Service Forester for New Castle County, receives an Employee Award.

Todd Gsell (at right), Conservation Technician, awarded Employee of the Quarter.



Training and Development

OMB Delaware Learning Center

- ADA Made Simple
- Conflict Resolution
- Controlling Rumors: Filling the Vacuum
- Creating a respectful workplace: micro-course
- DiSC Personal Profile/Behavioral Styles
- Diversity Made Simple for Managers
- Domestic Violence, Sexual Violence and Stalking Policy
- Driving Defensively
- EEO Made Simple
- Gender Identity Harassment in the Workplace
- Gender Identity Policy and Procedure
- Hidden Bias
- HIPAA Training for Members of the HIPAA Workforce
- Leadership: What's Trust Got To Do With It? (2nd Edition)
- Managing Hybrid Teams
- Managing Workplace Stress: How To Stay Productive Under Pressure
- Mastering Effective Communication
- Motivating Your Team: How to keep morale high
- Positive Discipline
- Selection Interviewing
- Sexual Harassment Prevention in Delaware
- Small Acts of Leadership: Intentional Skills for Big Impact
- Standards of Conduct Policy and Procedure
- Time Management: Why It's Not About Time
- Trauma Awareness for State Employees
- Understanding Unconscious Bias
- Workplace Retaliation: It's Illegal

Forest Management

- A Planners Guide to the Chesapeake Bay
- ArcGIS Pro: Tips and Tricks (ESRI online)
- ArcPro Terminology (ESRI online)
- Creating a Map Layout (ESRI online)
- Everything you wanted to know about Tree Ordinances
- Migrating Map to Pro (ESRI online)
- Partners in Community Forestry
- Tree Campus Conference, Arbor Day Foundation
- Urban Forest Connections – Building Workforce Equity & Community Capacity Through Pre-Apprenticeship Programs
- Urban Forest Connections, Methods and Public Health Impacts of Community-Based Urban Forestry Efforts
- Urban Forestry Today, UMass
- Urban Forestry Today, Climate Change and Urban Trees: What Does the Future Hold?
- Urban Trees and Storm Water Management: Quantifying Impacts, Maximizing Benefits
- U.S. Forest Service CARS reporting
- West Virginia Forest Health Forum: Biodiversity and Conservation

KnowBe4 Cyber Security

- Ask the Expert (Social Media Phishing)
- Cyber Security Awareness Assessment
- Did You See That One (Reporting Incidents)
- Everybody Loves Mia (Third Party Vendors)
- I Know What You Did Last Weekend (App Permission)
- It's Come to My Attention (Homeworking)
- New Best Friend (Insider Threat)
- Nobody Watches Those Things (Executive Behaviour)
- Restricted Intelligence
- Security Awareness Proficiency Assessment
- Security Awareness Training
- Social Engineering



FISCAL YEAR 2022 BUDGET SUMMARY

General Funds	Amount
Salaries and associated costs (16.5 positions)	1,156,204
Contractual Services	17,100
Supplies and Materials	20,200
Energy	18,700
General Funds Subtotal	\$1,212,204

Appropriated Special Funds	Amount
Salaries and associated costs (2.5 positions)	212,815
Capital Outlay	23,825
Contractual Services	101,817
Supplies and Materials	138,193
Energy	16,001
Travel	49,816
DDA Marketing Section	19,934
Appropriated Special Funds Subtotal	\$562,401

Federally Funded Cooperative Programs *

* includes funding for 3 positions

Forest Health Protection	Amount
Forest Health Management/Monitoring	83,000
Cooperative Fire Protection	Amount
State Fire Assistance	129,908
Volunteer Fire Assistance	31,267
Cooperative Forestry	Amount
Urban and Community Forestry	250,000
Forest Stewardship	100,000
Chesapeake Bay Watershed	27,000
Federally Funded Programs Subtotal	\$621,175

Total Fiscal 2022 Budget \$2,395,780

Wildland Fire

- Fire Hazard Awareness
- S-212 Wildland Saws
- All Hazard Logistical Support
- S-290 Intermediate Wildland Behavior
- ICS-100 Introduction to the Incident Command System
- IS-700 Introduction to National Incident Management System IMS
- S-190 Introduction to Wildland Fire Behavior



- S-130 Firefighter Training
- L-180 Human Factors in the Wildland Fire Service
- Fatigue and Stress Management for Fire Fighters
- RT-130 Fire Camp
- 2021 Incident Review Summary
- Eastern Area 2022 Outlook and 2021 After Action
- Two More Chains
- COVID-19 and Wildland Fire

Blackbird Forest's fall colors



The Delaware Forest Service is an Equal Opportunity Employer and Provider. The State of Delaware is an Equal Employment Opportunity (EEO) employer. The Delaware Department of Agriculture conducts all programs without discrimination based on gender, race, color, religion, national origin, age, disability, veterans or marital status, or sexual orientation. Persons with disabilities requiring alternative means for communication of program information should contact the Delaware Relay Service at 1-800-232-5460.

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Redden State Forest	302-856-2893
Forest Health Specialist	302-698-4553
Educational Programs	302-698-4551
Wildfire Program	302-698-4548
Landowner Assistance	302-856-2893
Community Relations	302-698-4552

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Protect, Educate***